Network Segmentation on NETGEAR Orbi Pro WiFi 6 Series

White Paper

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Abstract

NETGEAR Orbi Pro WiFi 6 Series makes it simple and fast for small and medium businesses (SMBs) to achieve network security by easily creating multiple and distinct IP Layer3 local area networks (LANs). Benefits include having separate LANs for different users with different profiles, such as one for guests who want to access the Internet, and another for transferring confidential company information.

With Network Segmentation, separate LANs can be created on an IP level across both WiFi and Ethernet ports. With Orbi Pro's unique wireless backhaul technology Network segmentation can be implemented across locations where it is difficult or impossible to run extra cables.

Network Segmentation is just one of the outstanding features of NETGEAR Orbi Pro WiFi 6 wireless mesh system, with others including: unparalleled coverage, extensive capacity, high and reliable performance, and its existing security strengths.

This white paper focuses on Network Segmentation, and explores how Orbi Pro brings enterprise level security features to small and medium sized businesses (SMBs). It also includes a guide to setting up Network Segmentation with Orbi Pro WiFi6 SXK80 and Orbi Pro WiFi 6 Mini SXK30.

Key Terms

LAN – Local Area Network (LAN) is a network that provides network connectivity for a group of devices at one physical location, such as an office, another type of work building, or at home

IP Segmentation – Creates multiple Layer 3 IP networks

Virtual Local Area Network (VLAN) – Creates separate sub-networks on the same Layer 3 network

IP (Internet Protocol) **Address** – A numerical label, such as 192.0.2.1, that is connected to a computer network that uses the Internet Protocol for communication. An IP address serves two main functions: host or network interface identification and location addressing.

Client Isolation – Orbi Pro provides the ability to isolate clients on the same VLAN

Network Isolation – Orbi Pro provides the ability to isolate hosts, ports and different clients in the VLAN, thereby increasing security

VLAN Profiles – Specification of the VLAN profile to apply to each port or wireless SSID

Access Mode – Allows the direct connection to only client or end devices

Trunk Mode – Enables forwarding of tagged packets with a specific VLAN tag only.

What is Network Segmentation?

Ideally, many SMBs want to create separate and secure networks for their information assets.). Each LAN or VLAN is dedicated to a particular purpose, for example, a guest network isolated from internal VLANs, with all its wired/ wireless traffic is directed through the Internet.

Many SMBs achieve their separation of networks through VLANs. The Orbi Pro WiFi 6 series takes it one step further by creating separate physical LANs – through a feature known as Network Segmentation. NETGEAR Orbi Pro WiFi 6 supports IP segmentation across wired and wireless interfaces. The process in creating multiple networks is by first assigning a VLAN profile to each individual wired and wireless interface, then assign that VLAN profile to one LAN. This wired/wireless VLAN separation can be completed without having to enable access to proprietary internal systems or applications.

Network Segmentation is available in Orbi Pro WiFi6 (SXK80) and Orbi Pro WiFi 6 Mini (SXK30).

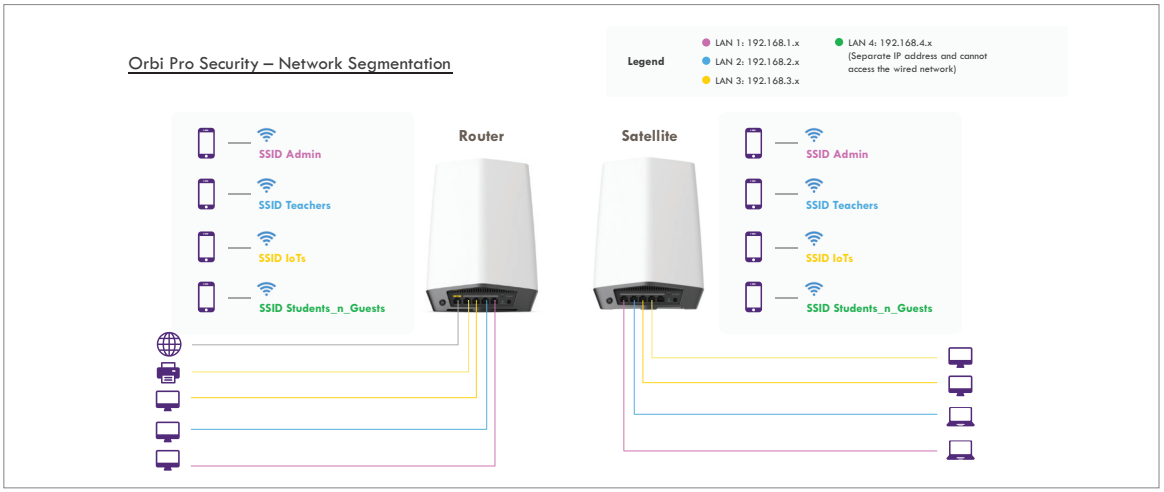
How Customers can Take Advantage of Network Segmentation

One of the best ways to show the benefits of Network Segmentation is with a couple of examples:

Guest printer access – A guest visiting a company may want access to a printer to create a hard copy of an airline ticket for their return journey. So, the guest logs their wireless device into the Orbi Pro WiFi 6 Guest SSID and print out the airline ticket using a dedicated guest printer connected to the Orbi Pro WiFi 6 satellite located at the front desk of the business.

Separate staff access – Different teams on the same work site can have their own dedicated LAN, all running from the same single network, providing access to business-critical systems. So, there could be one for HR (employee records), one for the finance department (invoices), and one for the sales team (access to a CRM).

A key differentiator between a business mesh system and its consumer counterpart is the level of security. Orbi Pro offers the industry's only SSID-VLAN Automatic Tie-in together with Network Segmentation. This allows a small business to separate networked assets into public and departmental networks, through VLAN separation and Level 3 IP segmentation. These two features greatly enhance the level of security in the business network, across both wired and wireless networked assets.

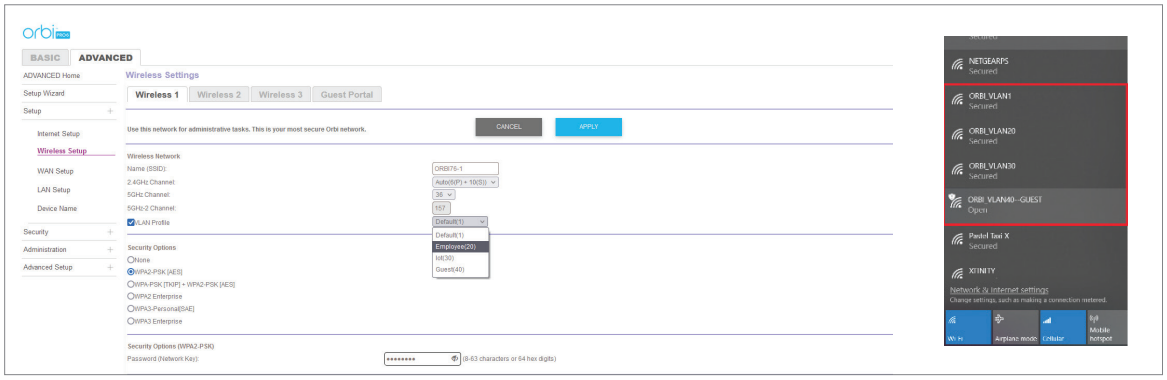


How to Configure the Orbi Pro WiFi 6 with Network Segmentation

The Orbi Pro WiFi 6 local web graphical user interface (GUI) makes it simple to configure Network Segmentation on both wired and wireless LANs, and can be completed in 3 simple steps.

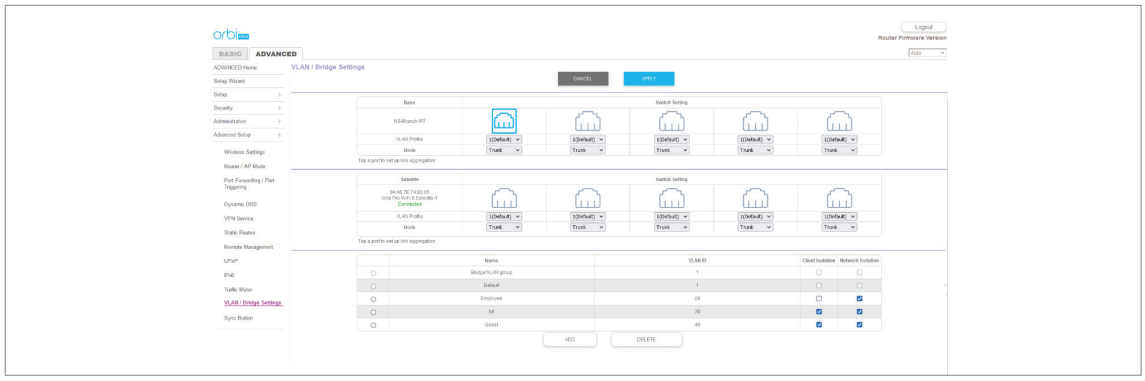
1. Map SSID to VLAN

The diagram below shows how to map the pre-defined VLAN profile onto wireless SSIDs.



With the Orbi Pro WiFi 6 series, VLAN1 (Default), VLAN20 (Employee), VLAN30 (IoT), and VLAN40 (Guest) are created by default.

To verify and configure the VLAN database, follow this process: Advanced -> Advanced Settings -> VLAN/Bridge Settings



2. Map LAN networks to the VLANs

The diagram below provides the settings to map LAN networks to VLANs: Advanced -> Settings -> LAN Settings

A total of 5 networks and DHCP Pool can be set. By default, the following is provided:

LAN1: 192.168.1.x/24 - VLAN1

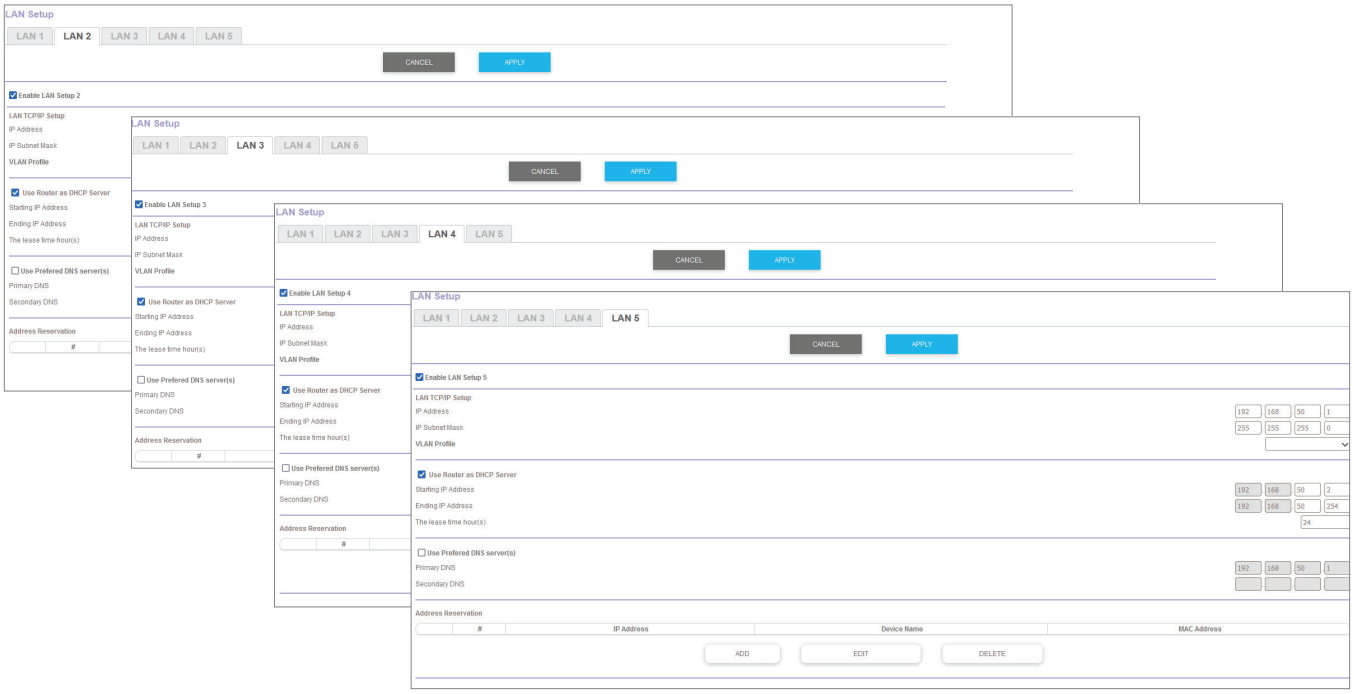
LAN2: 192.168.20.x/24 - VLAN20

LAN3: 192.168.30.x/24 - VLAN30

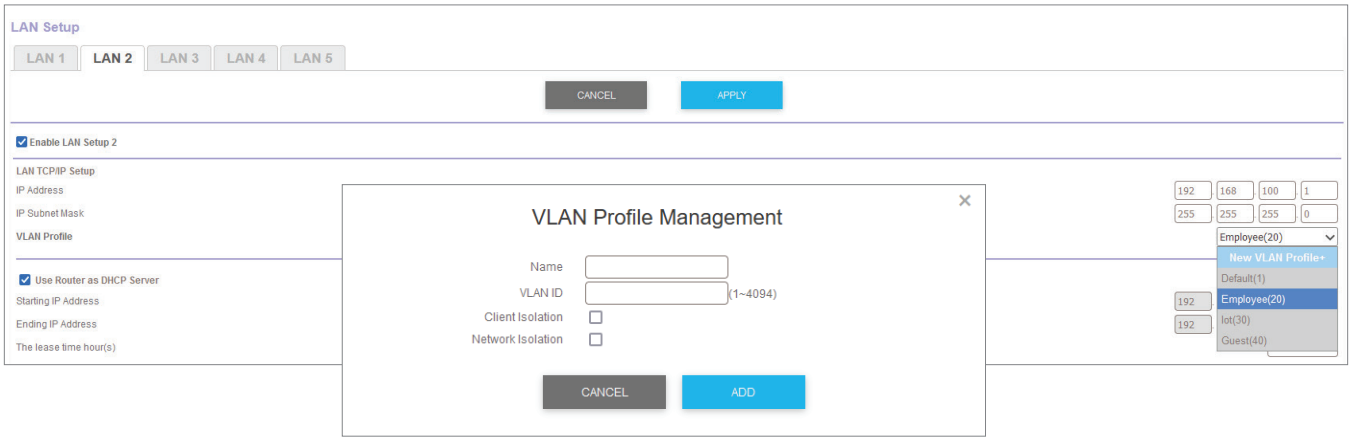
LAN4: 192.168.40.x/24 - VLAN40

LAN5: 192.168.50.x/24 - VLAN50

Assign VLAN profiles to each network and DHCP pool.

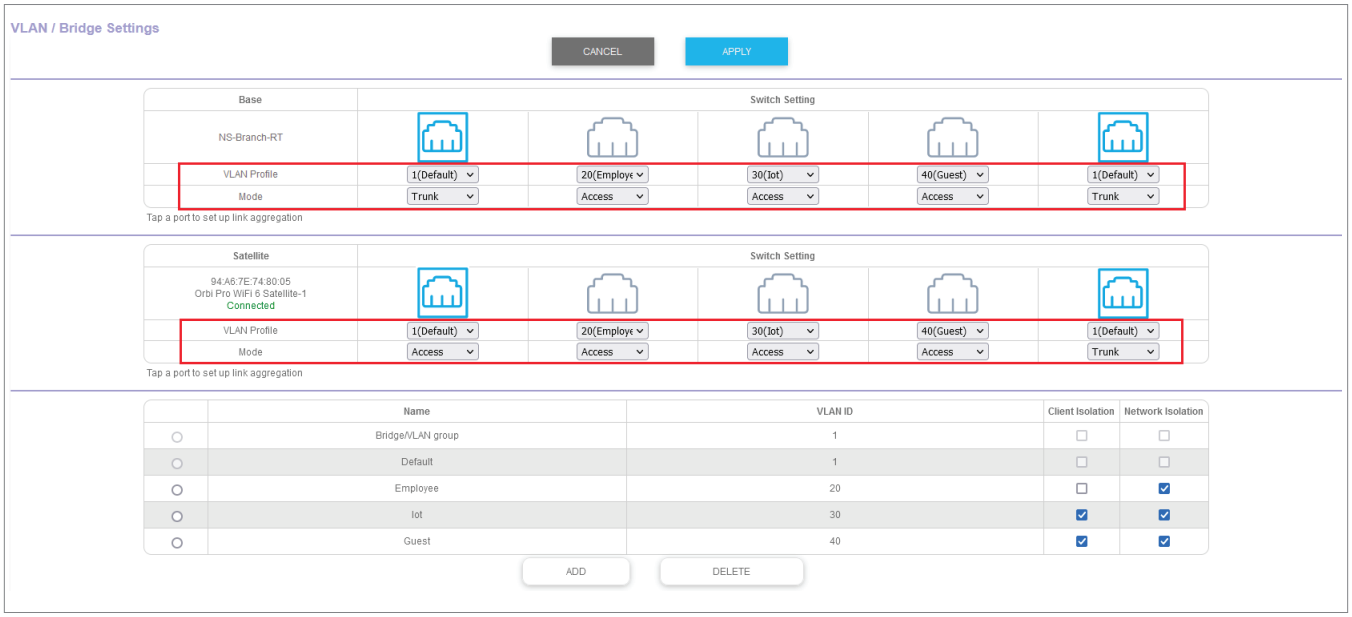


To create a VLAN profile on the Orbi Pro WiFi 6 router:



3. Map Ethernet ports to VLANs

The diagram below shows how to map Ethernet ports to VLANs



Conclusion

Network Segmentation gives customers an easy, fast and flexible way to segment the network at the IP level, creating multiple Layer 3 networks, throughout the entire mesh network, including the base unit and all its satellites. Businesses can be confident that networks and information are securely segregated, and they can even extend LANs to areas of a work site previously impossible to access.

Together with other features within NETGEAR Orbi Pro WiFi 6, businesses have access to powerful network design that meets the needs of different users and tasks, simply and affordably, with customizable, separate and secure LANs.

For More Information on NETGEAR Orbi Pro WiFi 6 Series:
Visit https://www.netgear.com/business/wifi/mesh/

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